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SEARCH REQUEST FORM

Scientific and Technical Information Center

CRF C

Requester's Full Name: KHATOL SHAHNAN-SHAIT Examiner #: 78526 Date: 6/19/01
Art Unit: 1645 Phone Number 308-8896 Serial Number: 09/646,043
Mail Box and Bldg/Room Location: 8D-17 CM1 Results Format Preferred (circle): PAPER, DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method for detecting microbes from an enrichment culture

Inventors (please provide full names): Eiko Elias Halcalchto

Earliest Priority Filing Date: 3/13/98 See attached Bib sheet

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please do a full and a sequence search for all data bases

claims 1 — 13 attached.

Seq Id # 1 attached

Plus Author Search.

Thanks

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prot 1

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STAFF USE ONLY	Type of Search	Vendors and cost where applicable
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Date Completed: 6/25	Litigation _____	Lexis/Nexis _____
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Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: 4 / 19	Other _____	Other (specify) _____

14

PTO-1590 (1-2000)

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show files
File 155:MEDLINE(R) 1966-2001/Jun W3
         (c) format only 2001 Dialog Corporation
File   5:Biosis Previews(R) 1969-2001/Jun W3
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File 351:Derwent WPI 1963-2001/UD,UM &UP=200134
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?ds

Set     Items   Description
S1      28406   FIMBRIA? OR PILIN? ?
S2     148028   SALMONELLA?
S3   11677255   DETECT? OR MEASUR? OR ASSAY? OR ANALYZ? OR ANALYS?
S4    1940892   ANTIBOD? OR IMMUNOGLOBULIN? ?
S5     166652   IMMUNOASSAY? ?
S6         30   AU=HAKALEHTO E? OR AU=HAKALEHTO, E?
S7        572   S1 (5N) S2
S8          2   S6 AND S1
S9          2   RD S8 (unique items)
S10    318330   ENTERIC? OR ENTEROBACT?
S11       288   S1 (5N) S10
S12       754   S11 OR S7
S13        72   S12 AND S3 AND S4
S14         7   S12 AND S5
S15        73   S13 OR S14
S16        48   RD S15 (unique items)
?t 9/7/all

 9/7/1      (Item 1 from file: 351)
DIALOG(R)File 351:Derwent WPI
(c) 2001 Derwent Info Ltd. All rts. reserv.

012756105
WPI Acc No: 1999-562222/199947
 Microbiological determination, useful for detecting microbes in clinical
 samples, food and environmental samples
Patent Assignee: HAKALEHTO E E (HAKA-I); HAKALEHTO E (HAKA-I)
Inventor: HAKALEHTO E ; HAKALEHTO E E
Number of Countries: 085  Number of Patents: 003
Patent Family:
Patent No     Kind   Date     Applicat No    Kind   Date     Week
WO 9947931    A1   19990923  WO 99FI192      A   19990315  199947  B
AU 9927309    A    19991011  AU 9927309      A   19990315  200008
EP 1062513    A1   20001227  EP 99907648     A   19990315  200102
                             WO 99FI192      A   19990315

Priority Applications (No Type Date): FI 98571 A 19980313
Patent Details:
Patent No  Kind Lan Pg   Main IPC     Filing Notes
WO 9947931    A1 E  19 G01N-033/569
   Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU
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CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC
LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL
TJ TM TR TT UA UG US UZ VN YU ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW
AU 9927309 A G01N-033/569 Based on patent WO 9947931
EP 1062513 A1 E G01N-033/569 Based on patent WO 9947931
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI
LU MC NL PT SE

Abstract (Basic): WO 9947931 A1

NOVELTY - A new microbiological determination method comprises detecting microbes from their cultivation medium clearly prior to the peak of the population cell growth using the antigens which the cells express soon after their inoculation to the enrichment medium.

USE - The method is useful for detecting microbes (especially Salmonella) in clinical samples, food samples e.g. in the meat industry, or environmental samples.

ADVANTAGE - The method can be applied in large scale for the rapid monitoring of Salmonella in foodstuffs.

pp; 19 DwgNo 0/2

Derwent Class: B04; C06; D16; S03
International Patent Class (Main): G01N-033/569

9/7/2 (Item 2 from file: 351)
DIALOG(R)File 351:Derwent WPI

010917879
WPI Acc No: 1996-414830/199642
Fimbriae-antigens, -antibodies, -vaccine and detection method - NoAbstract
Patent Assignee: HAKALEHTO E (HAKA-I)
Inventor: HAKALEHTO E
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
FI 9500253	A	19960721	FI 95253	A	19950120	199642	B

Priority Applications (No Type Date): FI 95253 A 19950120
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
FI 9500253	A			C07K-000/00	

Derwent Class: B04; D16; S03
International Patent Class (Main): C07K-000/00
International Patent Class (Additional): A61K-000/00; C12Q-000/00; G01N-000/00
?t 16/7/all

16/7/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10905856 20470746 PMID: 11020067
Application of the agar gel precipitin test to detect antibodies to Salmonella enterica serovar enteritidis in serum and egg yolks from

infected hens.
Holt PS; Stone HD; Gast RK; Greene CR
USDA-Agriculture Research Service, Southeast Poultry Research Laboratory, Athens, Georgia 30605, USA. pholt@ix.netcom.com
Poultry science (UNITED STATES) Sep 2000, 79 (9) p1246-50, ISSN 0032-5791 Journal Code: PG3
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Serological surveillance can be an important component for egg quality assurance programs geared toward controlling problems with Salmonella enterica serovar Enteritidis (S. enteritidis) within a flock. Serum is the primary sample source for the procedures, although egg yolk antibody assays have become popularity in recent years. However, these assays tend to be labor intensive, requiring procedures for extracting antibodies from the yolk followed by assaying the samples. We describe an adaptation of the agar gel precipitin (AGP) test for use in detecting antibodies to S. enteritidis deposited in egg yolks of infected hens. Yolk or sera from infected birds were administered to wells cut into seven-well clusters in an agar gel plate, and detection antigen was added to the center well. The agar gels were incubated for 24 h and then examined for the presence of precipitin lines formed by the interaction of antibody with antigen. Three different antigens were tested: S. enteritidis flagella, SEF14 (a 14-kDa fimbrial protein produced ostensibly by S. enteritidis), and a sodium deoxycholate extract of whole S. enteritidis organism. Flagella and the organism extract detected antibodies to S. enteritidis in the yolk and sera, whereas SEF14 was not reactive. Positive reactions were observed in serum 1 wk postchallenge, whereas in yolks, this was further delayed by 1 wk. The sensitivity of the test was slightly less than the standard microagglutination assay , although specificity was slightly higher, as indicated by results from sera and yolks from birds infected with Salmonella enterica serovar Typhimurium. Simplicity and low labor requirements of the assay would allow for the potential testing of several hundred egg samples within a day, which would make up for test shortcomings due to sensitivity. The AGP test could be an important tool for individuals using serological testing to monitor the S. enteritidis situation within their flocks or as a rapid screen for vaccine responses. The assay could also be used in tandem with other AGP tests to screen for the presence of multiple avian pathogens.

16/7/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10626552 20278088 PMID: 10816454
Mucosal and systemic immune responses to chimeric fimbriae expressed by Salmonella enterica serovar typhimurium vaccine strains.
Chen H; Schifferli DM
Department of Pathobiology, University of Pennsylvania School of Veterinary Medicine, Philadelphia, Pennsylvania 19104, USA.
Infection and immunity (UNITED STATES) Jun 2000, 68 (6) p3129-39, ISSN 0019-9567 Journal Code: GO7
Contract/Grant No.: CA-16520, CA, NCI; DK-19525, DK, NIDDK
Languages: ENGLISH
Document type: Journal Article
Record type: Completed

Recombinant live oral vaccines expressing pathogen-derived antigens offer a unique set of attractive properties. Among these are the simplicity of administration, the capacity to induce mucosal and systemic immunity, and the advantage of permitting genetic manipulation for optimal antigen presentation. In this study, the benefit of having a heterologous antigen expressed on the surface of a live vector rather than intracellularly was evaluated. Accordingly, the immune response of mice immunized with a Salmonella enterica serovar Typhimurium vaccine strain expressing the Escherichia coli 987P fimbrial antigen on its surface (Fas(+)) was compared with the expression in the periplasmic compartment (Fas(-)). Orally immunized BALB/c mice showed that 987P fimbriated Salmonella serovar Typhimurium CS3263 (aroA asd) with pCS151 (fas(+) asd(+)) elicited a significantly higher level of 987P-specific systemic immunoglobulin G (IgG) and mucosal IgA than serovar Typhimurium CS3263 with pCS152 (fasD mutant, asd(+)) expressing 987P periplasmic antigen. Further studies were aimed at determining whether the 987P fimbriae expressed by serovar Typhimurium chi4550 (cya crp asd) could be used as carriers of foreign epitopes. For this, the vaccine strain was genetically engineered to express chimeric fimbriae carrying the transmissible gastroenteritis virus (TGEV) C (379-388) and A (521-531) epitopes of the spike protein inserted into the 987P major fimbrial subunit FasA. BALB/c mice administered orally serovar Typhimurium chi4550 expressing the chimeric fimbriae from the tet promoter in pCS154 (fas(+) asd(+)) produced systemic antibodies against both fimbria and the TGEV C epitope but not against the TGEV A epitope. To improve the immunogenicity of the chimeric fimbriae, the in vivo inducible nirB promoter was inserted into pCS154, upstream of the fas genes, to create pCS155. In comparison with the previously used vaccine, BALB/c mice immunized orally with serovar Typhimurium chi4550/pCS155 demonstrated significantly higher levels of serum IgG and mucosal IgA against 987P fimbria. Moreover, mucosal IgA against the TGEV C epitope was only detected with serovar Typhimurium chi4550/pCS155. The induced antibodies also recognized the epitopes in the context of the full-length TGEV spike protein. Hence, immune responses to heterologous chimeric fimbriae on Salmonella vaccine vectors can be optimized by using promoters known to be activated in vivo.

16/7/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10228616 99277109 PMID: 10347761
New vaccine strategies against enterotoxigenic Escherichia coli. II: Enhanced systemic and secreted antibody responses against the CFA/I fimbriae by priming with DNA and boosting with a live recombinant Salmonella vaccine.

Lasaro MO; Alves AM; Guillobel HC; Almeida DF; Ferreira LC
Laboratorio de Fisiologia Celular, Instituto de Biofisica Carlos Chagas Filho, Universidade Federal do Rio de Janeiro, Brasil.

Brazilian journal of medical and biological research (BRAZIL) Feb 1999, 32 (2) p241-6, ISSN 0100-879X Journal Code: BOF
Languages: ENGLISH
Document type: Journal Article
Record type: Completed

The induction of systemic (IgG) and mucosal (IgA) antibody responses against the colonization factor I antigen (CFA/I) of enterotoxigenic Escherichia coli (ETEC) was evaluated in mice primed with an

intramuscularly delivered CFA/I-encoding DNA vaccine followed by two oral immunizations with a live recombinant Salmonella typhimurium vaccine strain expressing the ETEC antigen. The booster effect induced by the oral immunization was detected two weeks and one year after the administration of the DNA vaccine. The DNA-primed/Salmonella-boosted vaccination regime showed a synergistic effect on the induced CFA/I-specific systemic and secreted antibody levels which could not be attained by either immunization strategy alone. These results suggest that the combined use of DNA vaccines and recombinant Salmonella vaccine strains can be a useful immunization strategy against enteric pathogens.

16/7/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09914666 99003165 PMID: 9784559
Oral immunization with a Salmonella typhimurium vaccine vector expressing recombinant enterotoxigenic Escherichia coli K99 fimbriae elicits elevated antibody titers for protective immunity.
Ascon MA; Hone DM; Walters N; Pascual DW
Veterinary Molecular Biology, Montana State University, Bozeman, Montana 59717, USA.
Infection and immunity (UNITED STATES) Nov 1998, 66 (11) p5470-6, ISSN 0019-9567 Journal Code: GO7
Contract/Grant No.: AI 41914, AI, NIAID; AI 42603, AI, NIAID
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Bovine enterotoxigenic Escherichia coli (ETEC) continues to cause mortality in piglets and newborn calves. In an effort to develop a safe and effective vaccine for the prevention of F5(+) ETEC infections, a balanced lethal asd+ plasmid carrying the complete K99 operon was constructed and designated pMAK99-asd+. Introduction of this plasmid into an attenuated Salmonella typhimurium Deltaaro Deltaasd strain, H683, resulted in strain AP112, which stably expresses E. coli K99 fimbriae. A single oral immunization of BALB/c and CD-1 mice with strain AP112 elicited significant mucosal immunoglobulin A (IgA) titers that remained elevated for >11 weeks. IgA and IgG responses in serum specific for K99 fimbriae were also induced, with a prominent IgG1, as well as IgG2a and IgG2b, titer. To assess the derivation of these antibodies , a K99 isotype-specific B-cell ELISPOT analysis was conducted by using mononuclear cells from the lamina propria of the small intestines (LP), Peyer's patches (PP), and spleens of vaccinated and control BALB/c mice. This analysis revealed elevated numbers of K99 fimbria-specific IgA-producing cells in the LP, PP, and spleen, whereas elevated K99 fimbria-specific IgG-producing cells were detected only in the PP and spleen. These antibodies were important for protective immunity. One-day-old neonates from dams orally immunized with AP112 were provided passive protection against oral challenge with wild-type ETEC, in contrast to challenged neonates from unvaccinated dams or from dams vaccinated with a control Salmonella vector. These results confirm that oral Salmonella vaccine vectors effectively deliver K99 fimbriae to mucosal inductive sites for sustained elevation of IgA and IgG antibodies and for eliciting protective immunity.

16/7/5 (Item 5 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

09901866 98422332 PMID: 9748652
Periplasmic and fimbrial SefA from Salmonella enteritidis.
Clouthier SC; Collinson SK; Lippert D; Ausio J; White AP; Kay WW
Department of Biochemistry and Microbiology, Petch Building, University of Victoria, P.O. Box 3055, Victoria, B.C. V8W 3P6, Canada.
Biochimica et biophysica acta (NETHERLANDS) Sep 8 1998, 1387 (1-2) p355-68, ISSN 0006-3002 Journal Code: A0W
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Salmonella enteritidis produces thin, filamentous fimbriae composed of the fimbrin subunit SefA. Although insoluble in most detergents and chaotropic agents, these fimbriae were soluble at pH 10.5. Furthermore, in sodium dodecyl sulfate, these fibers depolymerized into monomers, dimers and other multimers of SefA, which precipitated on removal of the detergent. In contrast, unassembled periplasmic SefA fimbrins purified from Escherichia coli expressing cloned sefA and sefB were readily soluble in aqueous solution. Fimbrial and periplasmic SefA also differed in their reaction with an anti-SEF14 monoclonal antibody and in their surface hydrophobicity, indicating that the two forms had different properties. Precise mass measurements of periplasmic and fimbrial SefA by mass spectroscopy showed that these variations were not due to post-translational modifications. Periplasmic SefA consisted primarily of intact as well as some N-terminally truncated forms. The main 24 amino acid, N-terminally truncated form of periplasmic SefA was present as a 12.2 kDa monomer which had a low tendency to dimerize whereas intact periplasmic SefA was present as a 34.1 kDa homodimer. Intact periplasmic SefA also formed stable multimers at low concentrations of chemical cross-linker but multimerization of the truncated form required high concentrations of protein or cross-linker. Thus, SefA fimbrins appear to multimerize through their N-termini and undergo a conformational change prior to assembly into fibers. Within these fibers, subunit-subunit contact is maintained through strong hydrophobic interactions.

16/7/6 (Item 6 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09836659 98316937 PMID: 9654365
Epitope specificity of a monoclonal antibody generated against the dissociated CFA/I fimbriae of enterotoxigenic Escherichia coli.
de Luna MG; Rudin A; Vinhas SA; de Almeida DF; de Souza Ferreira LC
Disciplina de Microbiologia e Imunologia, Faculdade de Ciencias Medicas, Universidade do Estado do Rio de Janeiro, RJ, Brazil. luna@uerj.br
Microbiology and immunology (JAPAN) 1998, 42 (5) p341-6, ISSN 0385-5600 Journal Code: MX7
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
A monoclonal antibody (MAb 84) raised against the dissociated CFA/I fimbriae of enterotoxigenic Escherichia coli was characterized with regard to antigen binding and epitope specificity. Enzyme-linked immunosorbent assay (ELISA) showed that MAb 84 had higher affinity to CFA/I subunits

than to intact CFA/I fimbriae and recognized a Salmonella flagellin carrying an insert corresponding to amino acids 32 to 45 of the CFA/I subunit. Fine epitope mapping based on the Pepscan technique showed that the peptide 39TFESY43, derived from the sequence of the mature CFA/I subunit, was specifically recognized by MAb 84. The 39TFESY43 sequence is probably not accessible on the surface of the native CFA/I fimbriae since MAb 84 did not bind to intact fimbriae as evaluated in inhibition ELISA tests. Moreover, MAb 84 did not agglutinate fimbriated ETEC cells nor inhibit CFA/I-mediated hemagglutination or the adhesion to Caco-2 cells.

16/7/7 (Item 7 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
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09737153 98211025 PMID: 9549856
Characterisation of epitopes of type 1 fimbriae of Salmonella using monoclonal antibodies specific for SEF21 fimbriae of Salmonella enteritidis.
Sojka MG; Carter MA; Thorns CJ
Department of Bacteriology, Central Veterinary Laboratory, Surrey, UK.
Veterinary microbiology (NETHERLANDS) Jan 16 1998, 59 (2-3) p157-74, ISSN 0378-1135 Journal Code: XBW
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Monoclonal antibodies (mAbs) were used to identify and characterise epitopes of type 1 (SEF21) fimbriae of Salmonella enteritidis. The distribution of the epitopes among salmonellas and other enterobacteria was investigated, as well as the influence of growth media and temperatures on their expression. At least four different epitope clusters were identified on SEF21 fimbriae of S. enteritidis. Two of these clusters were associated with fimbrial haemagglutinins that were either common to all salmonellae tested, or restricted only to S. enteritidis and S. dublin. The four epitope clusters were identified on type 1 fimbriae of most Salmonella serotypes, as well as non-haemagglutinating type 2 fimbriae of S. pullorum and S. gallinarum, and on many other enterobacterial species. The expression of the epitopes was affected by growth conditions.

16/7/8 (Item 8 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
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09419984 97461346 PMID: 9317027
Specificity of the high-mannose recognition site between Enterobacter cloacae pili adhesin and HT-29 cell membranes.
Pan YT; Xu B; Rice K; Smith S; Jackson R; Elbein AD
Department of Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, Little Rock 72205, USA.
Infection and immunity (UNITED STATES) Oct 1997, 65 (10) p4199-206, ISSN 0019-9567 Journal Code: GO7
Contract/Grant No.: DK-21800, DK, NIDDK
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Enterobacter cloacae has been implicated as one of the causative agents

in neonatal infection and causes a septicemia thought to be initiated via the gastrointestinal tract. The adhesion of radiolabeled E. cloacae to HT-29 cells was concentration and temperature dependent and was effectively blocked by unlabeled bacteria or by millimolar concentrations of alpha-mannosides and micromolar concentrations of high-mannose oligosaccharides. A variety of well-characterized mannose oligosaccharides were tested as inhibitors of adhesion. The best inhibitor was the Man9(GlcNAc)2-tyrosinamide, which was considerably better than other tyrosinamide-linked oligosaccharides such as Man7(GlcNAc)2, Man6(GlcNAc)2 or Man5(GlcNAc)2. Further evidence that the bacteria preferred Man9(GlcNAc)2 structures was obtained by growing HT-29 cells in the presence of glycoprotein processing inhibitors that block mannosidase I and increase the amount of protein-bound Man9(GlcNAc)2 at the cell surface. Such cells bound 1.5- to 2-fold more bacteria than did control cells. The adhesin involved in binding to high-mannose structures was purified from isolated pili. On sodium dodecyl sulfate-gels, a 35-kDa protein was identified by its specific binding to a mannose-containing biotinylated albumin. The amino acid sequences of several peptides from the 35-kDa subunit showed over 85% identity to FimH, the mannose-specific adhesin of Salmonella typhimurium. Pili were labeled with 125I and examined for the ability to bind to HT-29 cells. Binding showed saturation kinetics and was inhibited by the addition of Man9(GlcNAc)2-tyrosinamide but not by oligosaccharides with fewer mannose residues. Polyclonal antibody against this 35-kDa protein also effectively blocked adhesion of pili or E. cloacae, but no effect was observed with nonspecific antibody . These studies demonstrate that the 35-kDa pilus subunit is a lectin whose specificity is directed toward Man, (GlcNAc)2 oligosaccharides.

16/7/9 (Item 9 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09148210 96252844 PMID: 9054118
Characterisation of monoclonal antibodies specific to SEF 21 fimbriae of Salmonella enteritidis and their reactivity with other Salmonellae and Enterobacteria.
Sojka MG; Dibb-Fuller M; Thorns CJ
Department of Bacteriology, Central Veterinary Laboratory, Addlestone, Surrey, UK.
Veterinary microbiology (NETHERLANDS) Feb 1996, 48 (3-4) p207-21, ISSN 0378-1135 Journal Code: XBW
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
A panel of monoclonal antibodies (mAbs) specific to type 1 (SEF 2) fimbriae of S. enteritidis was produced using crude and HPLC purified preparations of SEF 21 fimbriae. Sixteen mAbs were selected by indirect ELISA using both purified SEF 21 antigen and whole cells of S. enteritidis. Eight mAbs were confirmed by immunoprecipitation assay to react specifically with SEF 21 fimbriae. These mAbs were further characterised for their reactivity patterns by the "whole cell" ELISA and latex agglutination test with a number of strains of Salmonella and other enterobacteria. Not all SEF 21 mAbs reacted in both ELISA and latex agglutination tests with whole bacterial cells. mAb 611 was the only one suitable for use in both tests. Unexpectedly these mAbs reacted with the type 1 fimbriae of many of the tested strains of enterobacteria. mAb 721

reacted with most strains of Salmonella (89.1%) and enterobacteria (71.4%) tested. mAb 611 reacted with 61%-75% of strains of Salmonella and with 6.9%-17.6% of enterobacteria in ELISA and latex tests respectively. These mAbs will be useful reagents for further characterisation of type 1 fimbriae expressed by members of the family Enterobacteriaceae.

16/7/10 (Item 10 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09099586 97080381 PMID: 8921734
Seroreactivity of Salmonella-infected cattle herds against a fimbrial antigen in comparison with lipopolysaccharide antigens.
Hoorfar J; Lind P; Bell MM; Thorns CJ
Danish Veterinary Laboratory, Copenhagen, Denmark, UK.
Zentralblatt fur Veterinarmedizin (GERMANY) Oct 1996, 43 (8) p461-7, ISSN 0514-7166 Journal Code: Y72
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
The IgG seroreaction of Salmonella -infected cattle herds against a fimbrial antigen (SEF14) was compared with that against lipopolysaccharide (LPS) antigens. Sera from 23 dairy herds (n = 205) from an island with no occurrence of salmonellosis, four herds (n = 303) with recent outbreaks of S. dublin and four herds (n = 168) with recent outbreaks of S. typhimurium, were tested in a SEF14-ELISA, S. dublin LPS (0:1, 9, 12) ELISA and S. typhimurium LPS (0:1, 4, 5, 12) ELISA. At a cut-off OD of 0.5, only one of the animals tested from the salmonellosis-free island showed significant seroreaction against the SEF14 antigen, which was confirmed in a Western-blot analysis . Three out of the four S. dublin-infected herds had several seroreactors in the SEF14-ELISA, whereas all the four herds were positive in the 0:1, 9, 12-ELISA. All but two samples (both from the same herd) in the four S. typhimurium-infected herds, positive in the 0:1, 4, 5, 12-ELISA, had OD values below 0.5 in the SEF14-ELISA. The results indicate that cattle can produce detectable specific antibodies against fimbrial antigens which may be used for screening of S. dublin-infected herds, particularly in areas with low prevalence of salmonellosis, increasing the predictive value of serology.

16/7/11 (Item 11 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08724501 96189692 PMID: 8605578
Salmonella fimbriae: novel antigens in the detection and control of salmonella infections.
Thorns CJ
Bacteriology Department, Central Veterinary Laboratory, New Haw, Addlestone, UK.
British veterinary journal (ENGLAND) Nov-Dec 1995, 151 (6) p643-58, ISSN 0007-1935 Journal Code: B5C
Languages: ENGLISH
Document type: Journal Article; Review; Review, Tutorial
Record type: Completed
Fimbriae are thin, proteinaceous surface organelles produced by members

of the Enterobacteriaceae, including most salmonellas . A number of fimbrial antigens expressed by strains of Salmonella enteritidis and S. typhimurium have now been described and characterized. However, their functions are still poorly understood, although some evidence indicates they have a role in bacterial survival in the host or external environment. Diagnostic tests based on the detection of fimbriae or specific antibodies against them have recently been developed and applied successfully to the rapid and specific identification of S. enteritidis infections. The role of salmonella fimbriae in future generations of live vaccines either as protective antigens or as the carriers of heterologous antigens is also discussed. (82 Refs.)

16/7/12 (Item 12 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08419885 95020611 PMID: 7934897
Unique fimbriae-like structures encoded by sefD of the SEF14 fimbrial gene cluster of Salmonella enteritidis.
Clouthier SC; Collinson SK; Kay WW
Department of Biochemistry and Microbiology, University of Victoria, British Columbia, Canada.
Molecular microbiology (ENGLAND) Jun 1994, 12 (6) p893-901, ISSN 0950-382X Journal Code: MOM
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
The SEF14 gene cluster of Salmonella enteritidis was recently shown to contain three genes, sefABC, encoding a unique fimbrin, and proteins homologous to fimbrial chaperones and outer membrane proteins (ushers), respectively. A fourth open reading frame, designated sefD, was found immediately downstream of sefABC and overlapping sefC. The translated protein sequence of sefD was unique, but the composition was similar to that of other bacterial fimbriae. SefD was produced in abundance by wild-type S. enteritidis as shown by Western blot analysis using antibodies raised to affinity-purified, recombinant SefD. Furthermore, unusually long, thin, fimbriae-like structures were evident on S. enteritidis and Escherichia coli by immunoelectron microscopy, but in other bacterial species SefD was expressed as amorphous material. Therefore, in S. enteritidis and E. coli, SefD is the predominant structural subunit of SEF18. The SEF18 fimbriae-like structures were shown to be serologically distinct from the three known S. enteritidis fimbriae SEF14, SEF17 and SEF21. Furthermore, SEF18 was still produced in sefA insertion mutants, indicating that SEF14 and SEF18 were structurally distinct. Thus, the SEF14 gene cluster is the first example in the Enterobacteriaceae of a gene cluster that encodes two fimbrin-like proteins, which are assembled into two distinct cell-surface structures, SEF14 and SEF18. DNA hybridization and Western blot analyses showed that SefD was widely distributed among the Enterobacteriaceae and was present in E. coli, Shigella, Enterobacter, Citrobacter, Erwinia, Hafnia, Klebsiella, Providencia, and Proteus but not in the non-Enterobacteriaceae Gram-negative bacteria Pseudomonas and Aeromonas, or in Gram-positive bacteria Bacillus or Staphylococcus.(ABSTRACT TRUNCATED AT 250 WORDS)

16/7/13 (Item 13 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

08277954 95048770 PMID: 7960117
A Salmonella enteritidis 11RX pilin induces strong T-lymphocyte responses.
Ogunniyi AD; Manning PA; Kotlarski I
Department of Microbiology and Immunology, University of Adelaide, Australia.
Infection and immunity (UNITED STATES) Dec 1994, 62 (12) p5376-83, ISSN 0019-9567 Journal Code: GO7
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Our previous work, using proteins fractionated by sodium dodecyl sulfate-polyacrylamide gel electrophoresis to define antigens of Salmonella enteritidis 11RX able to stimulate T cells from S. enteritidis 11RX-primed (BALB/c x C57BL/6)F1 mice, had indicated the presence of a major antigenic determinant of 14 to 18 kDa (H.-M. Vordermeier and I. Kotlarski, Immunol. Cell. Biol. 68:299-305, 1990). The 14-kDa size is similar to that of the monomeric units of one of the fimbrial structures, SEF14, produced by a human enteropathogen, S. enteritidis 27655 (J. Feutrier, W. W. Kay, and T. J. Trust, J. Bacteriol. 168:221-227, 1986). Here we present data which indicate that S. enteritidis 11RX also produces this protein and that it is able to elicit delayed-type hypersensitivity reactions in S. enteritidis 11RX-primed animals and to stimulate in vitro proliferation of, and cytokine release from, T cells obtained from these animals, implying that this fimbrial protein is likely to be an important immunogen of S. enteritidis. The protein was purified to homogeneity and is free from contamination with lipopolysaccharide. Standard immunoblot analysis with unabsorbed S. enteritidis 11RX antiserum and antiserum absorbed with Salmonella typhimurium C5 and various strains of Escherichia coli, as well as a panel of anti-14-kDa-protein monoclonal antibodies , suggests that this fimbrial protein is not the common antigen expressed by a number of organisms belonging to the family Enterobacteriaceae. Immunogold electron microscopy with one of these monoclonal antibodies confirms that the 14-kDa protein and SEF14 are identical.

16/7/14 (Item 14 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08258940 95020794 PMID: 7935059
Purification and characterization of type 1 fimbriae of Salmonella typhi.
Muscas P; Rossolini GM; Chiesurin A; Santucci A; Satta G
Dipartimento di Biologia Molecolare, Universita di Siena, Italy.
Microbiology and immunology (JAPAN) 1994, 38 (5) p353-8, ISSN 0385-5600 Journal Code: MX7
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Type 1 fimbriae have been purified from a Salmonella typhi strain of clinical origin. Purified fimbriae retained their ability to bind to erythrocytes in a mannose-inhibitable fashion and, in doing so, behaved preferentially as a monovalent adhesin. SDS-PAGE analysis of the fimbrial

preparation showed the presence of a 20-kDa major polypeptide component (fimbrillin) and of additional larger polypeptides present in smaller amounts. The amino-terminal sequence of fimbrillin was determined and turned out to be very similar but not identical to that of type 1 fimbrillins of other Salmonella serovars. A Western blot analysis of the purified fimbrial preparation using an antiserum raised against native fimbriae suggested that fimbrial proteins did not carry any major sequential epitope and that, in native fimbriae, conformational epitopes, possibly generated between different subunits, might provide for the major immunogenic epitopes. Analysis of different S. typhi clinical isolates using the anti-fimbrial antiserum showed an overall immunological similarity of these structures within this serovar.

16/7/15 (Item 15 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

08225330 94275806 PMID: 7911840
Passive immunisation against experimental salmonellosis in mice by orally administered hen egg-yolk antibodies specific for 14-kDa fimbriae of Salmonella enteritidis.
Peralta RC; Yokoyama H; Ikemori Y; Kuroki M; Kodama Y
Immunology Research Institute, Gifu City, Japan.
Journal of medical microbiology (SCOTLAND) Jul 1994, 41 (1) p29-35, ISSN 0022-2615 Journal Code: J2N
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Chickens were immunised with a preparation of purified 14-kDa fimbriae of Salmonella serotype Enteritidis (SEF 14) to raise egg-yolk antibodies for protection trials in mice against subsequent challenge-exposure with the homologous strain of Enteritidis. A pronounced specificity of egg-yolk antibodies against the 14-kDa fimbrial antigen was demonstrated by Western blotting analysis . Passive antibody protection was evaluated in a mouse model of experimental salmonellosis: 79 mice (CD 1 strain) were challenged orally with 2 x 10(10) cfu of Enteritidis. Test mice treated with SEF-14 antibodies (titre = 128) had a survival rate of 77.8% compared to 32% survival in control mice fed normal egg-yolk antibodies (titre < 10) (p < 0.01). In-vitro adhesion of Enteritidis to mouse intestinal epithelial cells was reduced by anti-fimbrial antibodies . An indirect immunofluorescence method demonstrated the localisation of Enteritidis along the villous margins of the small intestine of control mice, whereas in test mice adherent bacteria were not detected . Results suggest that 14-kDa fimbriae may influence, enhance or contribute to the overall adhesive properties of Enteritidis and that egg-yolk antibodies directed against these fimbriae may have played a substantial role in protection, possibly by minimising bacterial colonisation and invasion during the early stages of infection.

16/7/16 (Item 16 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

07933539 93381459 PMID: 8371111
Cloning, DNA nucleotide sequence and distribution of the gene encoding

the SEF14 fimbrial antigen of Salmonella enteritidis.
Turcotte C; Woodward MJ
Molecular Genetics Unit, Central Veterinary Laboratory, Addlestone (Weybridge), Surrey, UK.
Journal of general microbiology (ENGLAND) Jul 1993, 139 (Pt 7) p1477-85, ISSN 0022-1287 Journal Code: I87
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Monoclonal antibody 69/25, specific for the Salmonella enteritidis fimbrial antigen (SEF14), was used to screen a pUC-based S. enteritidis gene library and a positive clone was identified. Subcloning experiments demonstrated that a 584 bp DraI DNA fragment was the minimal chromosomal segment capable of directing SEF14 antigen expression. Western blotting of Escherichia coli recombinants identified a gene product of M(r) 16000 as a precursor to the M(r) 14300 mature fimbrial subunit protein. The DNA nucleotide sequence of the DraI fragment was determined and was shown to contain a single open reading frame with two potential f-Met start codons and a hydrophobic signal sequence. Downstream of a putative peptidase cleavage site, the deduced amino acid sequence showed considerable homology with the N-terminal amino acid sequence of what was originally described as the type 1 fimbrial subunit of Salmonella enteritidis and later redefined as SEF14. The gene encoding SEF14, designated as sefA, was shown to be limited in distribution to Salmonella blegdam, S. dublin, S. enteritidis, S. gallinarum, S. moscow, S. pullorum, S. rostock, S. seremban and S. typhi, all belonging to Salmonella group D. However, expression of the SEF14 antigen was limited to S. dublin, S. enteritidis, S. moscow and S. blegdam. The nucleotide sequence of the sefA gene shared no homology with the Salmonella fimA gene encoding type 1 fimbriae , and these genes showed distinct patterns of distribution within salmonellae.

16/7/17 (Item 17 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

06932103 93101851 PMID: 1361237
Characterisation of monoclonal antibodies against a fimbrial structure of Salmonella enteritidis and certain other serogroup D salmonellae and their application as serotyping reagents.
Thorns CJ; Sojka MG; Mclaren IM; Dibb-Fuller M
Ministry of Agriculture, Fisheries and Food, Central Veterinary Laboratory, Weybridge, Surrey.
Research in veterinary science (ENGLAND) Nov 1992, 53 (3) p300-8, ISSN 0034-5288 Journal Code: R7D
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
A panel of 13 monoclonal antibodies from different hybridomas was produced against a novel salmonella fimbrial antigen expressed predominantly by Salmonella enteritidis strains. The specificity of the monoclonal antibodies to this antigen (SEF14) was confirmed by enzyme-linked immunosorbent assay (ELISA) using purified SEF14, immune electron microscopy and, with 11 monoclonal antibodies , the identification of a repeating protein subunit (14,300kDa) on the antigen. Blocking-ELISA with the monoclonal antibodies identified epitopes in at least three, non-overlapping clusters which appeared evenly distributed on

SEF14 in immune electron microscopy. The use of the monoclonal antibodies in direct-binding ELISA on a range of salmonella serotypes suggested that the epitopes on SEF14 are highly conserved and were expressed by all the S enteritidis strains examined; some strains of S dublin and the only strain of S moscow available were the only other serotypes that expressed SEF14. A latex agglutination reagent based on a monoclonal antibody was developed and used to test for SEF14 on 280 strains (representing 120 serotypes in 24 serogroups of salmonellae) that had been grown on Sensitest agar for 18 hours at 37 degrees C. All S enteritidis strains (64) and most S dublin strains (28 of 33) produced SEF14 as did the two strains representing S blegdam and S moscow. SEF14 was not detected in any other strains of serotypes from serogroup D or from any other serogroup examined.

16/7/18 (Item 18 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

06852722 92129575 PMID: 1685495
Fimbrial types among respiratory isolates belonging to the family Enterobacteriaceae.
Hornick DB; Allen BL; Horn MA; Clegg S
Department of Internal Medicine, University of Iowa College of Medicine, Iowa City 52242.
Journal of clinical microbiology (UNITED STATES) Sep 1991, 29 (9) p1795-800, ISSN 0095-1137 Journal Code: HSH
Contract/Grant No.: GM07337, GM, NIGMS
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Bacterial attachment is believed to be an early step in gram-negative nosocomial pneumonia. The frequency of fimbria-associated adhesins among respiratory pathogens has not been studied in detail. In this study isolates belonging to the family Enterobacteriaceae, prospectively obtained from intensive care unit patients who were suspected of having nosocomial pneumonia, were examined for fimbria-associated adhesins. Type 3, P, type 1, and other fimbrial phenotypes were identified by specific hemagglutination and electron microscopy. The Klebsiella type 3 fimbrial phenotype was further characterized by using a monoclonal antibody . Also, both type 3 and Escherichia coli P fimbrial genotypes were detected by using DNA colony blot assays . The frequencies of genera or species isolated were as follows: Enterobacter (38.6%), Klebsiella (26.8%), Serratia (17.7%), E. coli (13%), and Proteus (5.2%). Isolates of Klebsiella oxytoca, K. pneumoniae, and Enterobacter cloacae most commonly possessed the type 3 fimbrial phenotype and genotype. The phenotype and genotype for E. coli P fimbriae (46.2 and 50%, respectively), a known pathogenic determinant in the urinary tract, were detected more frequently than expected. In addition, a previously unspecified hemagglutinin that was specific for porcine erythrocytes was almost uniformly expressed among isolates of Enterobacter aerogenes. Finally, the expression of the type 1 fimbrial phenotype was widely detected among the isolates tested but notably absent among K. oxytoca and Proteus mirabilis isolates. The frequency of the various fimbrial types identified suggests a role for these bacterial organelles in adherence to respiratory epithelia.

16/7/19 (Item 19 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

06838972 91072589 PMID: 1701443
Detection of a novel fimbrial structure on the surface of Salmonella enteritidis by using a monoclonal antibody.
Thorns CJ; Sojka MG; Chasey D
Central Veterinary Laboratory, Ministry of Agriculture, Fisheries and Food, Weybridge, Surrey, United Kingdom.
Journal of clinical microbiology (UNITED STATES) Nov 1990, 28 (11) p2409-14, ISSN 0095-1137 Journal Code: HSH
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
A fimbrialike structure expressed on the surface of Salmonella enteritidis was identified by using a monoclonal antibody (69/25) produced against intact S. enteritidis cells. Fimbriae were less than 5 nm in diameter and carried a protein consisting of subunits with a molecular weight of 14,300. No hemagglutinating activity associated the fimbriae was detected . An epitope on the fimbrial antigen iden monoclonal antibody 69/25 was expressed by all 58 S. s, 12 of 36 S. dublin strains, and a single strain of S. None of 169 other isolates tested from 17 salmonella seroc is epitope.

JCM 1990

16/7/20 (Item 20 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

06725827 91218674 PMID: 1982551
Adherence and pathogenesis of Salmonella enteritidis in mice.
Aslanzadeh J; Paulissen LJ
Department of Botany and Microbiology, University of Arkansas, Fayetteville 72701.
Microbiology and immunology (JAPAN) 1990, 34 (11) p885-93, ISSN 0385-5600 Journal Code: MX7
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Adherence of many pathogenic organisms to the host cells has been associated with the presence of fimbriae. The exact role of these organelles in the adherence and pathogenesis of Salmonella enteritidis is not well established. Utilizing hemagglutination tests, S. enteritidis was shown to possess type 1 and type 3 fimbriae. Polyacrylamide gel electrophoresis of the isolated fimbriae showed that type 1 and 3 fimbriae of S. enteritidis had subunit M.r of 17 and 22 kDa, respectively. In vitro adherence assays suggested that S. enteritidis utilized type 1 fimbriae to adhere to human buccal and mouse small intestine epithelial cells. In addition, antibody produced against type 1 and type 3 fimbriae protected the mice from infection with a lethal dose of S. enteritidis. These results suggest that type 1 and possibly type 3 fimbriae are involved in the adherence and pathogenesis of S. enteritidis. The data further suggest that they may have a role in the adherence and pathogenesis of the other enteric organisms.

16/7/21 (Item 21 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

06541178 89070702 PMID: 2904657
Conservation of the D-mannose-adhesion protein among type 1 fimbriated members of the family Enterobacteriaceae.
Abraham SN; Sun D; Dale JB; Beachey EH
Veterans Administration Medical Center, Memphis, Tennessee.
Nature (ENGLAND) Dec 15 1988, 336 (6200) p682-4, ISSN 0028-0836 Journal Code: NSC
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
A variety of genera and species of the family Enterobacteriaceae bear surface fimbriae that enable them to bind to D-mannose residues on eukaryotic cells. Until recently, it was thought that the D-mannose binding site was located in the major structural subunit (FimA), of relative molecular mass (Mr) 17,000 (17 K), of these organelles in Escherichia coli. New evidence indicates that this binding site resides instead in a minor protein Mr 28-31 K (FimH) located at the tips and at long intervals along the length of the fimbriae, and is reminiscent of the minor tip adhesion proteins of pyelonephritis-associated pili (Pap) and S fimbriae. In contrast to the antigenic heterogeneity of the major FimA subunit, the antigenic structure of FimH is conserved among different strains of E. coli. Here, we report an even broader conservation of this minor adhesion protein extending to other genera and species of type 1 fimbriated Enterobacteriaceae . Our results may have implications for the development of broadly protective vaccines against Gram-negative bacillary infections in animals and perhaps in man.

16/7/22 (Item 22 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

05958698 87008384 PMID: 2875990
Purification and characterization of fimbriae from Salmonella enteritidis.
Feutrier J; Kay WW; Trust TJ
Journal of bacteriology (UNITED STATES) Oct 1986, 168 (1) p221-7, ISSN 0021-9193 Journal Code: HH3
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
A human isolate of Salmonella enteritidis which displayed strong pellicle formation during static broth culture and mannose-sensitive hemagglutination produced fimbriae which were morphologically indistinguishable from type 1 fimbriae of members of the family Enterobacteriaceae . Fimbrin was purified to homogeneity, and the apparent molecular weight (Mr, 14,400) was markedly lower than that reported for the type 1 fimbrin of Salmonella typhimurium (Mr, 22,100). This fimbrin contained 40% hydrophobic amino acids and lacked cysteine. The sequence of the N-terminal 64 amino acids was determined, and sequence alignment revealed that although the 18 N-terminal residues of the S. enteritidis molecule shared considerable homology with Escherichia coli and S. typhimurium type 1 fimbrins, the S. enteritidis fimbrin lacked a 6- to 9-residue terminal sequence present in the other type 1 fimbrins and, after

residue 18, shared little homology with the E. coli sequence. Antibodies raised to the purified S. enteritidis fimbrin bound to surface-exposed conformational epitopes on the native fimbriae and displayed pronounced serospecificity. These antibodies were used in the isolation of a nonfimbriated Tn10 insertion mutant which was unable to hemagglutinate.

16/7/23 (Item 23 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

05854427 90059950 PMID: 2573518
Cloning and expression in Escherichia coli of Haemophilus influenzae fimbrial genes establishes adherence to oropharyngeal epithelial cells.
van Ham SM; Mooi FR; Sindhunata MG; Maris WR; van Alphen L
Department of Medical Microbiology, University of Amsterdam, The Netherlands.
EMBO journal (ENGLAND) Nov 1989, 8 (11) p3535-40, ISSN 0261-4189 Journal Code: EMB
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
In this report the first example of functional expression of a fimbrial gene cluster of a non- enteric human pathogen in Escherichia coli is described. This is shown for Haemophilus influenzae fimbriae which mediate adherence to oropharyngeal epithelial cells. A genomic library of H.influenzae type b, strain 770235f+bo, was constructed using a cosmid vector and screened with a synthetic oligonucleotide probe derived from the N-terminal sequence of the fimbrial subunit of H.influenzae. Four cosmid clones were found which hybridized to this oligonucleotide probe. Escherichia coli strains harbouring these clones expressed the H.influenzae fimbriae at their cell surface, as was demonstrated in a whole-cell ELISA and by immunogold electron microscopy using a monoclonal antibody specific for the H.influenzae fimbriae. Surface expression could be maintained during subcloning until a minimal H.influenzae DNA insert of approximately 8.1 kb was obtained. Escherichia coli strains harbouring the 8.1 kb H. influenzae DNA were able to cause a mannose-resistant adherence to oropharyngeal epithelial cells and a mannose-resistant haemagglutination of human AnWj-positive erythrocytes. The nucleotide sequence of hifA, the gene encoding the major fimbrial subunit, was determined. The predicted amino acid sequence shows a significant homology with a number of E.coli fimbrial subunits.

16/7/24 (Item 24 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

05522137 90198517 PMID: 2576522
Oral vaccination of rats with live avirulent Salmonella derivatives expressing adhesive fimbrial antigens of uropathogenic Escherichia coli.
Schmidt G; Hacker J; Wood G; Marre R
Forschungsinstitut Borstel, F.R.G.
FEMS microbiology immunology (NETHERLANDS) Mar 1989, 1 (4) p229-35, ISSN 0920-8534 Journal Code: AO3
Languages: ENGLISH
Document type: Journal Article

Record type: Completed

The avirulent Salmonella typhimurium F885 was transformed with a plasmid carrying the cloned S fimbriae genes of a uropathogenic Escherichia coli. The resulting transformant (F885-1) produced efficiently E. coli S fimbriae and was used for live oral vaccination of rats. For comparison rats were immunized subcutaneously with isolated S fimbriae. Both routes of vaccination resulted in a significant IgG antibody response to S fimbriae. In addition live oral vaccination induced a serum IgA response against S fimbriae. After transurethral infection of rats with a S fimbriae producing E. coli a 10-fold reduction of bacterial counts in the kidney was observed in rats orally vaccinated with F885-1 as compared to unvaccinated controls. This study suggests that the avirulent Salmonella F885 may be used as a fimbrial antigen carrier for oral vaccination against renal infections.

16/7/25 (Item 25 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

05521638 90130099 PMID: 2575611

Immunological and genetical relatedness of type-1 and type-2 fimbriae in salmonellas of serotypes Gallinarum, Pullorum and Typhimurium.

Crichton PB; Yakubu DE; Old DC; Clegg S

Department of Medical Microbiology, University of Dundee Medical School, Ninewells Hospital, Scotland, UK.

Journal of applied bacteriology (ENGLAND) Sep 1989, 67 (3) p283-91, ISSN 0021-8847 Journal Code: HDJ

Languages: ENGLISH

Document type: Journal Article

Record type: Completed

The fimbriae of 50 strains of serotype Gallinarum and 35 strains of serotype Pullorum of the genus Salmonella were compared with the type-1 fimbriae of serotype Typhimurium strains by immune electron microscopy and dot blot hybridization tests with gene probes for type-1 fimbriation in Typhimurium. The fimbriae of Gallinarum and Pullorum strains were coated with Typhimurium type-1 fimbrial antiserum and probes hybridized strongly with DNA of Gallinarum and Pullorum strains under stringent conditions. Furthermore, when Typhimurium type-1 fimbrial antiserum, that had been absorbed with fimbriate Gallinarum or Pullorum bacteria, was used in immune gold labelling experiments, it was shown that residual antibody recognized sites of possible adhesin incorporation at intervals along the length of Typhimurium type-1 fimbriae. These findings suggest that the type-2 fimbriae produced by all Gallinarum and Pullorum strains are non-adhesive forms of adhesive, type-1 fimbriae. This observation is of interest because type-1 fimbriae have never been reported in naturally occurring strains of these two avian-adapted serotypes.

16/7/26 (Item 26 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

05515548 89079290 PMID: 2562835

Type 3 fimbriae among enterobacteria and the ability of spermidine to inhibit MR/K hemagglutination.

Gerlach GF; Allen BL; Clegg S

Department of Microbiology, College of Medicine, University of Iowa, Iowa City 52242.
Infection and immunity (UNITED STATES) Jan 1989, 57 (1) p219-24,
ISSN 0019-9567 Journal Code: GO7
Contract/Grant No.: GM07337, GM, NIGMS
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
The distribution of the gene cluster encoding type 3 fimbriae among various isolates of the family Enterobacteriaceae was investigated by using 112 clinical and nonclinical isolates. Closely related DNA sequences were detected in all Klebsiella strains, in most Enterobacter isolates, in a smaller number of Escherichia coli and Salmonella spp., and in a single isolate each of Yersinia enterocolitica and Serratia liquefaciens but not in isolates of Morganella or Providencia species or Serratia marcescens. Except for E. coli and Salmonella strains, the presence of gene sequences was correlated with the phenotypic expression of either the MR/K hemagglutinin or fimbriae that reacted with specific antibodies . In one isolate of Y. enterocolitica the expression of type 3 fimbriae was plasmid determined. The polyamine spermidine was identified as an inhibitor of MR/K hemagglutinating activity, exhibiting an MIC of 1.2 mM. Spermidine inhibited the hemagglutination of 37 MR/K-positive clinical isolates from various genera. However, one clinical isolate of Enterobacter cloacae and most (four of five) nonclinical Klebsiella isolates were not completely inhibited.

03992982 80203508 PMID: 6103872
Comparison of Escherichia coli fimbrial antigen F7 with type 1 fimbriae.
Orskov I; Orskov F; Birch-Andersen A
Infection and immunity (UNITED STATES) Feb 1980, 27 (2) p657-66,
ISSN 0019-9567 Journal Code: GO7
Languages: ENGLISH
Document type: Journal Article
Record type: Completed
Two Escherichia coli O6:K2:H1 strains, C1212 and C1214, isolated from urinary tract infections, were compared for their capacity to adhere to various cells. After growth on solid medium, only C1212 bacteria agglutinate human erythrocytes and attach to urinary epithelial cells. Both of these reactions are mannose resistant. In contrast, C1214 bacteria cause a mannose-sensitive agglutination of guinea pig erythrocytes, show a mannose-sensitive attachment to buccal epithelial cells, and attach to urinary mucus. Immunoelectron microscopy revealed that C1214 bacteria possess type 1 fimbriae (mannose sensitive), which are not present in C1212 bacteria when this strain is grown on solid medium. The fimbriae of C1212 (mannose resistant) were also demonstrated by immunoelectron microscopy. We call these fimbriae demonstrated in C1212 the E. coli F7 antigen. Urinary mucus, and probably mucous material elsewhere, may function as a trap for Enterobacteriaceae with type 1 fimbriae by the specific adherence of such bacteria. We consider this a nonimmune resistance mechanism against disease caused by Enterobacteriaceae.

16/7/28 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12708094 BIOSIS NO.: 200000461596
Overproduction of AgfA subunit of Salmonella enteritidis as a MBP-fusion protein in E. coli.
AUTHOR: Won Misun; Kim Soyoun; Lee Seunghwan; Kim Chuljung; Kim Hyunsu; Jun Moohyung; Song Kyung Bin(a)
AUTHOR ADDRESS: (a)Department of Food Science and Technology, Chungnam National University, Taejon, 305-764**South Korea
JOURNAL: Biotechnology Letters 22 (14):p1165-1167 July, 2000
MEDIUM: print
ISSN: 0141-5492
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

ABSTRACT: To study the characteristics of recombinant thin aggregative fimbriae of salmonella and to develop a vaccine for salmonella infections, the Agfa subunit gene was amplified from Salmonella entiritidis using PCR. Maltose binding protein (MBP)-AgfA fusion protein was over-produced in E. coli and purified. Antibody against MBP-AgfA was prepared and its immunogenicity was studied.

16/7/29 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11924463 BIOSIS NO.: 199900170572
Placement of enterotoxigenic Escherichia coli (ETEC) K99 fimbriae within different compartments of a Salmonella typhimurium vaccine vector impacts upon host immunity.
AUTHOR: Ascon M A; Pascual D W
AUTHOR ADDRESS: Montana State Univ., Bozeman, MT**USA
JOURNAL: FASEB Journal 13 (4 PART 1):pA290 March 12, 1999
CONFERENCE/MEETING: Annual Meeting of the Professional Research Scientists for Experimental Biology 99 Washington, D.C., USA April 17-21, 1999
ISSN: 0892-6638
RECORD TYPE: Citation
LANGUAGE: English

16/7/30 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11527727 BIOSIS NO.: 199800309059
Epitope specificity of a monoclonal antibody generated against the dissociated CFA/I Fimbriae of enterotoxigenic Escherichia coli.
AUTHOR: Luna Maria Das Gracas De(a); Rudin Anna; Vinhas Solange Alves; Almeida Darcy Fontoura De; Ferreira Luis Carlos De Souza
AUTHOR ADDRESS: (a)Disciplina Microbiol. Imunol., Fac. Cienc. Med., Univ. Estado Rio de Janeiro, Rua Prof. Manoel d**Brazil
JOURNAL: Microbiology and Immunology 42 (5):p341-346 1998

ISSN: 0385-5600
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A monoclonal antibody (MAb 84) raised against the dissociated CFA/I fimbriae of enterotoxigenic Escherichia coli was characterized with regard to antigen binding and epitope specificity. Enzyme-linked immunosorbent assay (ELISA) showed that MAb 84 had higher affinity to CFA/I subunits than to intact CFA/I fimbriae and recognized a Salmonella flagellin carrying an insert corresponding to amino acids 32 to 45 of the CFA/I subunit. Fine epitope mapping based on the Pepscan technique showed that the peptide 39TFESY43, derived from the sequence of the mature CFA/I subunit, was specifically recognized by MAb 84. The 39TFESY43 sequence is probably not accessible on the surface of the native CFA/I fimbriae since MAb 84 did not bind to intact fimbriae as evaluated in inhibition ELISA tests. Moreover, Nub 84 did not agglutinate fimbriated ETEC cells nor inhibit CFA/I-mediated hemagglutination or the adhesion to Caco-2 cells.

16/7/31 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

06639442 BIOSIS NO.: 000087081609
A CHROMOSOMAL INTEGRATION SYSTEM FOR STABILIZATION OF HETEROLOGOUS GENES IN SALMONELLA BASED VACCINE STRAINS
AUTHOR: HONE D; ATTRIDGE S; VAN DEN BOSCH L; HACKETT J
AUTHOR ADDRESS: DEP. MICROBIOL. IMMUNOL., UNIV. ADELAIDE, ADELAIDE, AUST. 5000.
JOURNAL: MICROB PATHOG 5 (6). 1988. 407-418. 1988
FULL JOURNAL NAME: Microbial Pathogenesis
CODEN: MIPAE
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: We have developed a system whereby heterologous DNA encoding an antigen from an enteropathogen may be recombined into the chromosome of an attenuated Salmonella carrier strain. The system involves two steps: (i) integration of a hisOG deletion mutation into the chromosome; (ii) replacement of the hisOG deletion by the complete hisOG region and the segment of heterologous DNA which encodes the antigen of interest. Recombinants may be selected (his+). The system was used to integrate the genes encoding K88 fimbriae from enterotoxigenic Escherichia coli into the chromosome of a galE mutant of Salmonella typhimurium (LT2H1). Recombinants were detected at a frequency of between 1.0 .times. 10-3 and 1.5 .times. 10-3. A variety of tests confirmed that the K88 genes were integrated into the chromosome of LT2H1 and were expressed. The stability of the recombinant was tested both in vivo and in vitro. When administered orally to mice, the recombinant elicited a serum antibody response to K88, and retained the Salmonella vaccine potential of the vector strain.

16/7/32 (Item 5 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

02744124 BIOSIS NO.: 000068054726
A NEW FIMBRIAL ANTIGEN AS A CAUSE FOR A COMPLETE O INAGGLUTINABILITY OF VARIOUS ARIZONA STRAINS
AUTHOR: ALEKSIC S; ROHDE R; ALEKSIC V; MUELLER G
AUTHOR ADDRESS: MEDIZINALUNTERSUCHUNGSAMT HYG. INST., GORCH-FOCK-WALL 15-17, D 2000 HAMBURG 36, W. GER.
JOURNAL: ZENTRALBL BAKTERIOL PARASITENKD INFEKTIONSKR HYG ERSTE ABT ORIG REIHE A MED MIKROBIOL PARASITOL 241 (4). 1978 (RECD. 1979). 427-437. 1978
FULL JOURNAL NAME: Zentralblatt fuer Bakteriologie Parasitenkunde Infektionskrankheiten und Hygiene Erste Abteilung Originale Reihe A Medizinische Mikrobiologie und Parasitologie
CODEN: ZMMPA
RECORD TYPE: Abstract
LANGUAGE: GERMAN

ABSTRACT: A new type of fimbrial antigen [Ag] in Arizona (= Salmonella sub-genus III [Salmonella arizonae]) was found. This fimbrial Ag could be of greatest diagnostic importance; routine examinations there was a lot of trouble with the strains that were totally inagglutinable in all available O antisera because of their strong fimbrial envelope. EM demonstrated that the bacterial cells were encircled by a dense fimbrial fringe which had to be destroyed by a 2 1/2 h heating process to restore O agglutinability. The strong appearance of fimbrial Ag prevents a serological O Ag diagnosis and makes typing far more difficult. It impedes the development of flagellar Ag to such a degree that serological determination of the H Ag, which is of vital importance to diagnosing the types, causes great difficulties. Arizona strains can be fimbriated entirely or partially. The latter form need not have a preventing effect on the O agglutinability. Partial fimbriation can be dangerous for the preparation of H antisera if fimbriation of the concerning strain is not discerned beforehand. For preparation of H antisera living bacterial suspensions are used. A fimbrial Ag which was not diagnosed before cannot develop its full agglutinogenic capacity. H and fimbrial antibodies are obtained, causing unspecificity of the H antiserum in question. Since these Arizona strains have a completely new antigenic structure, a thorough morphological and serological analysis was done, considering its possible diagnostic consequences.

16/7/33 (Item 1 from file: 315)
DIALOG(R)File 315:ChemEng & Biotec Abs

407170 CEABA Accession No.: 28-02-004419 DOCUMENT TYPE: Patent
Title: Method of testing for the presence of Salmonella serotypes expressing S. enteritidis fimbrial antigen (SEFA) and reagents therefor.
AUTHOR: Thorns, C. J.
CORPORATE SOURCE: Ministry Agric., Fisheries Food London UK
CODEN: USXXAM
PATENT NUMBER: US 5510241
PUBLICATION DATE: 23 Apr 1996 (960423) LANGUAGE: English
PRIORITY PATENT APPLICATION(S) & DATE(S): GB 9021290 (901001)
ABSTRACT: A method is disclosed for testing a sample for the presence of microorganisms for the presence of Salmonella serotypes expressing S.

enteritidis fimbrial antigen (SEFA). A sample suspected of containing the microorganisms or SEFA are exposed to an antibody which binds specifically to the antigen specifically bound by the monoclonal antibody secreted by ECACC 90101101 or ECACC 90101102, or an antibody which specifically binds the epitope bound by the monoclonal antibody secreted by ECACC 90101101 or ECACC 90101102. Specific antibody -antigen binding is detected as an indicator of the presence of S. enteritidis, S. dublin, S. moscow, or S. blegdam. Absence of such binding indicates the absence of S. enteritidis.

16/7/34 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

07690728 EMBASE No: 1999175488
Fimbriae- and flagella-mediated association with and invasion of cultured epithelial cells by Salmonella enteritidis
Dibb-Fuller M.P.; Allen-Vercoe E.; Thorns C.J.; Woodward M.J.
M.P. Dibb-Fuller, Bacteriology Department, Veterinary Lab. Agency (Weybridge), Addlestone, Surrey KT15 3NB United Kingdom
AUTHOR EMAIL: m.p.dibb-fuller@vla.maff.gov.uk
Microbiology (MICROBIOLOGY) (United Kingdom) 1999, 145/5 (1023-1031)
CODEN: MROBE ISSN: 1350-0872
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 45

Salmonella enteritidis expresses flagella and several finely regulated fimbriae, including SEF14, SEF17 and SEF21 (type 1). A panel of mutants was prepared in three strains of S. enteritidis to elucidate the role of these surface appendages in the association with and invasion of cultured epithelial cells. In all assays , the naturally occurring regulatory-defective strain 27655R associated with tissue culture cells significantly more than wild-type progenitor strains LA5 and S1400/94. Compared with wild-type strains, SEF14 mutants had no effect on association and invasion, whereas SEF17, SEF21 and aflagellate mutants showed significant reductions in both processes. Histological examination suggested a role for SEF17 in localized, aggregative adherence, which could be specifically blocked by anti-SEF17 sera and purified SEF17 fimbriae. SEFZ1-mediated association was neutralized by mannose and a specific monoclonal antibody , although to observe enhanced association it was necessary for the bacteria to be in fimbriate phase prior to infection. Additionally, aflagellate mutants associated and invaded less than motile bacteria. This study demonstrated the potential for multifactorial association and invasion of epithelial cells which involved SEF17 and SEF21 fimbriae, and flagella-mediated motility.

16/7/35 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

07134225 EMBASE No: 1998023097
Expression of SEF17 fimbriae by Salmonella enteritidis
Dibb-Fuller M.; Allen-Vercoe E.; Woodward M.J.; Thorns C.J.
Dr. C.J. Thorns, Bacteriology Department, Central Veterinary Laboratory,

New Haw, Addleston, Surrey KT15 3NB United Kingdom
AUTHOR EMAIL: cjthorns@vla.maff.gov.uk
Letters in Applied Microbiology (LETT. APPL. MICROBIOL.) (United Kingdom) 1997, 25/6 (447-452)
CODEN: LAMIE ISSN: 0266-8254
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 19

Specific immunological reagents were used to investigate the expression of SEF17 fimbriae by cultured strains of Salmonella enteritidis. Most strains of Salm. enteritidis tested expressed SEF17 when cultured at temperatures of 18-30degreeC. However, two wild-type strains produced SEF17 when also grown at 37degreeC and 42degreeC. Colonization factor antigen agar was the optimum medium for SEF17 expression, whereas Drigalski and Sensitest agars poorly supported SEF17 production. Very fine fimbriae produced by a strain of Salm. typhimurium were specifically and strongly labelled by SEF17 monoclonal and polyclonal antibodies , indicating considerable antigenic conservation between the two. Curli fimbriae from Escherichia coli were similarly labelled. The production of these fimbriae correlated with the binding of fibronectin by the organism. Congo red binding by cultured bacteria was not a reliable criterion for the expression of SEF17 fimbriae.

06431010 EMBASE No: 1996080720
Characterisation of monoclonal antibodies specific to SEF 21 fimbriae of Salmonella enteritidis and their reactivity with other Salmonellae and Enterobacteria 1

Sojka M.G.; Dibb-Fuller M.; Thorns C.J.
Department of Bacteriology, Central Venterinary Laboratory,New Haw, Addlestone, Surrey KT15 3NB United Kingdom
Veterinary Microbiology (VET. MICROBIOL.) (Netherlands) 1996, 48/3-4 (207-221)
CODEN: VMICD ISSN: 0378-1135
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

A panel of monoclonal antibodies (mAbs) specific to type 1 (SEF 21) fimbriae of 5. enteritidis was produced using crude and HPLC purified-preparations of SEF 21 fimbriae. Sixteen mAbs were selected by indirect ELISA using both purified SEF 21 antigen and whole cells of S. enteritidis. Eight mAbs were confirmed by immunoprecipitation assay to react specifically with SEF 21 fimbriae. These mAbs were further characterised for their reactivity patterns by the 'whole cell' ELISA and the latex agglutination test with a number of strains of Salmonella and other enterobacteria. Not all SEF 21 mAbs reacted in both ELISA and latex agglutination tests with whole bacterial cells. mAb 611 was the only one suitable for use in both tests. Unexpectedly these mAbs reacted with the type I fimbriae of many of the tested strains of enterobacteria. mAb 721 reacted with most strains of Salmonella (89.1%) and enterobacteria (71.4%) tested. mAb611 reacted with 61%-75% of strains of Salmonella and with 6.9%-17.6% of enterobacteria in ELISA and latex tests respectively. These

mAbs will be useful reagents for further characterisation of type 1 fimbriae expressed by members of the family Enterobacteriaceae.

16/7/37 (Item 4 from file: 73)
DIALOG(R)File 73:EMBASE

05716108 EMBASE No: 1994117956
Construction of K88- and K99-expressing clones of salmonella typhimurium G30: Immunogenicity following oral administration to pigs
Morona R.; Morona J.K.; Considine A.; Hackett J.A.; Van den Bosch L.; Beyer L.; Attridge S.R.
Dept. Microbiology/Immunology, University of Adelaide,Adelaide, SA 5005 Australia
Vaccine (VACCINE) (United Kingdom) 1994, 12/6 (513-517)
CODEN: VACCD ISSN: 0264-410X
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Salmonella typhimurium G30 was used as a vector to express the ETEC (enterotoxigenic Escherichia coli) fimbrial antigens K88 and K99. Two plasmids encoding K88 or K99 production and having a non-antibiotic selection marker (thyA+) were constructed. These were introduced into a thyA G30 derivative to give the vaccine strains EX841 and EX603, which were shown to express surface K88 or K99, respectively. When administered orally to adult pigs, a dose of 10sup 1sup 1 vaccine organisms elicited significant serum antibody responses to the respective fimbrial antigens. Two such immunizations with EX841 generated serum antibody levels comparable to those obtained with intramuscular injection of killed organisms. Attenuated salmonellae can thus be used to deliver ETEC fimbrial antigens to the porcine intestinal immune system.

16/7/38 (Item 5 from file: 73)
DIALOG(R)File 73:EMBASE

02747994 EMBASE No: 1984066953
Carbohydrate-binding sites of the mannose-specific fimbrial lectins of Enterobacteria
Firon N.; Ofek I.; Sharon N.
Department of Biophysics, The Weizmann Institute of Science, Rehovoth Israel
Infection and Immunity (INFECT. IMMUN.) (United States) 1984, 43/3 (1088-1091)
CODEN: INFIB
DOCUMENT TYPE: Journal
LANGUAGE: ENGLISH

The combining sites of type 1 fimbrial lectins of various species of enterobacteria were studied by measuring the inhibitory activity of linear and branched oligosaccharides and several glycosides of D-mannose on the agglutination of yeast cells by the organisms. The results showed that all five strains of Escherichia coli tested possessed an elongated combining site best fitting a trisaccharide and including a hydrophobic region. Similar results were obtained with Klebsiella pneumoniae. Within

the Salmonella genus, the combining sites of the six species tested were similar, but all differed significantly from those of the E. coli strains. The combining sites of Enterobacter cloacae and Enterobacter agglomerans were different from each other and from those of Salmonella sp. and E. coli. The results suggest that although classified under the general term 'mannose-specific', bacterial lectins in the form of type 1 fimbriae on different genera exhibit differences in sugar specificities.

16/7/39 (Item 6 from file: 73)
DIALOG(R)File 73:EMBASE

00470877 EMBASE No: 1976026413
Profuse fimbriae conferring O inagglutinability to several strains of S. typhi murium and S. enteritidis isolated from paste products. Cultural, morphological, and serological experiments
Rohde R.; Aleksic S.; Mueller G.; et al.
Mediz. Untersuch. Anst., Hyg. Inst., Hamburg Germany
ZBL.BAKT.REIHE A 1975, 230/1 (38-50)
CODEN: ZBPHA
DOCUMENT TYPE: Journal
LANGUAGE: ENGLISH

During the last 2 years, several O inagglutinable Salmonella strains were isolated from pasta products. The typing of these presented great difficulties. Serological and morphological tests (by electron microscopy) revealed a fimbrial antigen which was thermolabile to a certain degree. This antigen represents (in corroboration of J.P.Duguid) a special type of fimbriae of Salmonella and is morphologically different from type 1 and type 2 fimbriae previously described. It is probably an abnormal mutant form of fimbriae. Morphologically characteristic are its finer structure of filaments (2.7 nm) (Type 1 and type 2 of fimbriae measure in the range 6 to 8 nm) and the large number of filamentous appendages. Moreover, the authors' fimbriated strains do not form pellicle and are HA negative, in contrast to type 1 fimbriae of Salmonella . Fimbriation of the strain S. enteritidis fim + continued in the same profuse form under normal incubation conditions, at higher incubation temperatures (up to 42degreeC), and under aerobic as well as anaerobic conditions. Segregation of colonies fim + (= O inagglutinable) from colonies fim(+) (= agglutination with O and fimbrial antiserum) was rare: 10sup -sup 7 to 10sup -sup 9. Further passages of colonies fim(+) from one nutrient agar plate to another showed segregation to fim +, fim(+), and fim colonies. The fimbriae in these strains encircled the body of the bacteria like a dense fringe, thereby mechanically inhibiting the reactions of O antiserum. O agglutinability was restored by heating. This process destroyed the fimbrial envelope, and even abnormally fimbriated Salmonella strains could easily be diagnosed serologically. There were 12 S. enteritidis and 16 S. typhi murium var. Copenhagen strains isolated from pasta products in Switzerland which were O inagglutinable, and the fimbrial antigens of which were entirely identical as demonstrated by cross absorption and agglutination tests. The discovery of a fimbrial antigen in several Salmonella cultures by primo isolation from solid nutrient agar demonstrates the significance of this fimbrial antigen, which has the same practical importance for Salmonella diagnostics as for instance the Vi antigen. It is, therefore, recommended that the polyvalent Salmonella serum should be strengthened by adding fimbrial antiserum. Preparation of a pure fimbrial antiserum requires immunization

with a Salmonella fim + form (formalinized) and subsequent absorption with the corresponding O and H antigens. When using an O form, absorption of H agglutinins is not required. Tests were made regarding the properties of the fimbrial antigen, in particular of the 3 known antigenic differences: agglutinability, agglutinin binding and antibody forming (agglutinogenic) capacities. It was found that fimbrial antigen is largely destroyed by heating. The fimbrial agglutinability is greatly reduced after one hour's heating, and it is completely destroyed after 1/2 hour's heating at 120degreeC. Chemical treatment with 50% alcohol or n.HCl does not affect fimbrial agglutinability. Fimbrial agglutinin binding capacity (agglutinin absorption) is entirely destroyed by heating (even after one hour), whilst chemical treatment of the fimbrial antigen has no effect. A formalinized suspension of a culture fim + gives an optimal agglutinogenic effect on the formation of fimbrial antibodies . The heating process gradually reduces the agglutinogenic property of the fimbrial antigen, but it is only noticeable after at least 2 hours. On the other hand, chemical treatment with alcohol (50%) or n.HCl hardly affects the fimbrial agglutinogenic property of the fimbrial antigen for forming fimbrial and O antibodies , since during these processes fimbrial as well as O antibodies are formed simultaneously.

16/7/40 (Item 1 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

134070354 CA: 134(6)70354c PATENT
Detection of Salmonella enteritidis by detecting antibodies to fimbrial or flagellin proteins
INVENTOR(AUTHOR): Kwang, Hwei-Sing; Liu, Wei; Low, Su-Shing Sharon; Loh, Kwang Yeng Hilda
LOCATION: Singapore,
ASSIGNEE: Institute of Molecular Agrobiology
PATENT: PCT International ; WO 200078995 A1 DATE: 20001228
APPLICATION: WO 99SG61 (19990622)
PAGES: 48 pp. CODEN: PIXXD2 LANGUAGE: English CLASS: C12Q-001/10A; C07K-014/255B DESIGNATED COUNTRIES: AE; AL; AM; AT; AU; AZ; BA; BB; BG; BR ; BY; CA; CH; CN; CU; CZ; DE; DK; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MD; MG; MK; MN; MW; MX; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL; TJ; TM; TR; TT; UA; UG; US; UZ; VN; YU; ZA; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
DESIGNATED REGIONAL: GH; GM; KE; LS; MW; SD; SL; SZ; UG; ZW; AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; BF; BJ; CF; CG; CI; CM; GA; GN; GW; ML; MR; NE; SN; TD; TG
SECTION:
CA215001 Immunochemistry
CA209XXX Biochemical Methods
CA210XXX MICROBIAL, ALGAL, AND FUNGAL BIOCHEMISTRY
IDENTIFIERS: Salmonella enteritidis detection antibody fimbrial protein, flagellin antibody detection Salmonella enteritidis
DESCRIPTORS:
Egg yolk...
anal. of; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
Enzymes,uses... Fluorescent substances... Radionuclides...
as label; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins

Immunoassay...
enzyme-linked immunosorbent assay; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
Antigens...
fragments; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
Immunoglobulins...
G; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
Immunoassay...
immunoblotting; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
Pilus...
proteins; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
Antibodies... Biological materials... Blood analysis... Chicken(Gallus domesticus)... Flagellins... Immunoassay... Molecular cloning... Poultry... Salmonella enteritidis... Test kits...
Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
Gene,microbial...
sefA; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
Fusion proteins(chimeric proteins)...
with antigenic fragment; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
CAS REGISTRY NUMBERS:
314256-69-4P 314256-70-7P 315664-13-2P amino acid sequence, antigenic fragment of flagellin; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
315253-84-0P 315253-85-1P 315253-86-2P 315253-87-3P 315664-25-6P amino acid sequence, antigenic fragment; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
315253-83-9P amino acid sequence, antigenic fragments of; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
9003-99-0D conjugates with anti-chicken IgG, Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
50812-37-8D fusion proteins with flagellin, Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
315253-82-8P nucleotide sequence; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins
315255-88-0 315255-89-1 315255-90-4 315255-91-5 315255-92-6 315255-93-7 315255-94-8 315255-95-9 315255-96-0 315255-97-1 unclaimed sequence; detection of Salmonella enteritidis by detecting antibodies to fimbrial or flagellin proteins
7440-57-5 uses, as label; Salmonella enteritidis detection by detecting antibodies to fimbrial or flagellin proteins

16/7/41 (Item 2 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

134028434 CA: 134(3)28434d PATENT
Cloning and vaccine application of fimbrial proteins of Salmonella enterica

INVENTOR(AUTHOR): Folkesson, Anders; Normark, Staffan; Lofdahl, Sven
LOCATION: Swed.
ASSIGNEE: Active Biotech AB
PATENT: PCT International ; WO 200073336 A1 DATE: 20001207
APPLICATION: WO 2000SE1079 (20000526) *SE 991961 (19990528)
PAGES: 77 pp. CODEN: PIXXD2 LANGUAGE: English CLASS: C07K-014/225A; A61K-039/112B DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG ; BR; BY; CA; CH; CN; CR; CU; CZ; DE; DK; DM; DZ; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MA; MD; MG; MK; MN; MW; MX; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL; TJ; TM; TR; TT; TZ; UA; UG; US; UZ; VN; YU; ZA; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM DESIGNATED REGIONAL: GH; GM; KE; LS; MW; MZ; SD; SL; SZ ; TZ; UG; ZW; AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; BF; BJ; CF; CG; CI; CM; GA; GN; GW; ML; MR; NE; SN; TD; TG
SECTION:
CA215002 Immunochemistry
CA203XXX Biochemical Genetics
CA210XXX MICROBIAL, ALGAL, AND FUNGAL BIOCHEMISTRY
IDENTIFIERS: saf operon fimbrial protein sequence Salmonella, tcf operon fimbrial protein sequence Salmonella, vaccine fimbrial protein Salmonella
DESCRIPTORS:
Infection...
bacterial; immunodiagnosis of Salmonella enterica infection with antibodies to saf- and tcf-encoded proteins of subspecies I
Salmonella enterica typhi... Salmonella typhimurium...
cloning and therapeutic application of fimbrial proteins of
Nucleic acid hybridization...
for diagnosis of Salmonella enterica infection by detection of saf- and tcf-encoded proteins of subspecies I
DNA sequences... Protein sequences...
for fimbrial proteins of Salmonella enterica subspecies I
Genetic vectors...
for immunization with saf- and tcf-encoded proteins of Salmonella enterica subspecies I
Digestive tract...
gastroenteritis; saf- and tcf-encoded proteins of Salmonella enterica subspecies I for vaccination against
Proteins,specific or class...
gene safA; cloning and therapeutic application of Salmonella enterica subspecies I fimbrial proteins
Proteins,specific or class...
gene safB; cloning and therapeutic application of Salmonella enterica subspecies I fimbrial proteins
Proteins,specific or class...
gene safC; cloning and therapeutic application of Salmonella enterica subspecies I fimbrial proteins
Proteins,specific or class...
gene safD; cloning and therapeutic application of Salmonella enterica subspecies I fimbrial proteins
Proteins,specific or class...
gene tcfA; cloning and therapeutic application of Salmonella enterica subspecies I fimbrial proteins
Proteins,specific or class...
gene tcfB; cloning and therapeutic application of Salmonella enterica subspecies I fimbrial proteins
Proteins,specific or class...
gene tcfC; cloning and therapeutic application of Salmonella enterica

subspecies I fimbrial proteins
Proteins,specific or class...
gene tcfD; cloning and therapeutic application of Salmonella enterica subspecies I fimbrial proteins
Immunization...
genetic; with saf- and tcf-encoded proteins of Salmonella enterica subspecies I
Diagnosis...
immunodiagnosis; of Salmonella enterica infection with antibodies to saf- and tcf-encoded proteins of subspecies I
Immunization...
passive; with antibodies to saf- and tcf-encoded proteins of Salmonella enterica subspecies I
Operon...
saf; for fimbrial proteins of Salmonella enterica subspecies I
Gene,microbial...
saf; sequences for encoded fimbrial proteins of Salmonella enterica subspecies I
Antibacterial agents... Vaccines...
saf- and tcf-encoded fimbrial proteins of Salmonella enterica subspecies I for
Typhoid fever...
saf- and tcf-encoded proteins of Salmonella enterica subspecies I for vaccination against
Salmonella enterica...
subspecies I; cloning and therapeutic application of fimbrial proteins of
Operon...
tcf; for fimbrial proteins of Salmonella enterica typhi
Gene,microbial...
tcf; sequences for encoded fimbrial proteins of Salmonella enterica typhi
Antibodies...
to saf- and tcf-encoded proteins of Salmonella enterica subspecies I
CAS REGISTRY NUMBERS:
311355-75-6 311355-76-7 311355-77-8 311355-78-9 311355-79-0 311355-80-3 311355-81-4 311355-82-5 amino acid sequence; for diagnosis of Salmonella enterica infection by detection of saf- and tcf-encoded proteins of subspecies I
309984-45-0 309984-46-1 for hybridization anal. of Salmonella enterica infection by detection of saf- and tcf-encoded proteins of subspecies I
311355-73-4 311355-74-5 nucleotide sequence; for diagnosis of Salmonella enterica infection by detection of saf- and tcf-encoded proteins of subspecies I
311358-01-7 unclaimed protein sequence; cloning and vaccine application of fimbrial proteins of Salmonella enterica

16/7/42 (Item 3 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

130266455 CA: 130(20)266455y JOURNAL
Application of recombinant fimbrial protein for the specific detection of Salmonella enteritidis infection in poultry
AUTHOR(S): Rajashekara, Gireesh; Munir, Shirin; Lamichhane, Chinta M.; Back, Alberto; Kapur, Vivek; Halvorson, David A.; Nagaraja, Kakambi V.

LOCATION: Department of Veterinary PathoBiology, University of Minnesota, St. Paul, MN, 55108, USA
JOURNAL: Diagn. Microbiol. Infect. Dis. DATE: 1998 VOLUME: 32 NUMBER: 3 PAGES: 147-157 CODEN: DMIDDZ ISSN: 0732-8893 LANGUAGE: English
PUBLISHER: Elsevier Science Inc.
SECTION:
CA217001 Food and Feed Chemistry
CA203XXX Biochemical Genetics
CA209XXX Biochemical Methods
CA210XXX MICROBIAL, ALGAL, AND FUNGAL BIOCHEMISTRY
CA212XXX Nonmammalian Biochemistry
IDENTIFIERS: Salmonella enteritidis detection poultry egg recombinant fimbriae ELISA immunoassay
DESCRIPTORS:
Blood analysis... Egg yolk... ELISA(immunosorbent assay)... Latex agglutination test... Poultry... Salmonella enteritidis... Serum(blood)...
recombinant fimbrial protein for the specific detection of Salmonella enteritidis infection in poultry
Antibodies...
to Salmonella enteritidis fimbriae 14; recombinant fimbrial protein for the specific detection of Salmonella enteritidis infection in poultry
Pilus...
14, antibodies for; recombinant fimbrial protein for the specific detection of Salmonella enteritidis infection in poultry

16/7/43 (Item 4 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

128164911 CA: 128(14)164911k PATENT
A truncated Sefl4 fimbrial protein of Salmonella enteritidis and its use as an antigen in diagnosis and prophylaxis of infection
INVENTOR(AUTHOR): Rajashekara, Gireesh; Nagaraja, Kakambi V.; Kapur, Vivek
LOCATION: USA
ASSIGNEE: Regents of the University of Minnesota; Rajashekara, Gireesh; Nagaraja, Kakambi V.; Kapur, Vivek
PATENT: PCT International ; WO 9803656 A1 DATE: 19980129
APPLICATION: WO 97US12639 (19970718) *US 22191 (19960719)
PAGES: 38 pp. CODEN: PIXXD2 LANGUAGE: English CLASS: C12N-015/31A; C07K-014/255B; G01N-033/50B DESIGNATED COUNTRIES: AL; AM; AT; AT; AU; AZ; BA; BB; BG; BR; BY; CA; CH; CN; CU; CZ; CZ; DE; DE; DK; DK; EE; EE; ES; FI; FI; GB; GE; GH; HU; IL; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MD; MG; MK; MN; MW; MX; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SK; SL; TJ; TM; TR; TT; UA; UG; US; UZ; VN; YU; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM DESIGNATED REGIONAL: GH; KE; LS; MW; SD; SZ; UG; ZW; AT; BE; CH; DE ; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; BF; BJ; CF; CG; CI; CM; GA; GN; ML; MR; NE; SN; TD; TG
SECTION:
CA210001 MICROBIAL, ALGAL, AND FUNGAL BIOCHEMISTRY
CA203XXX Biochemical Genetics
CA209XXX Biochemical Methods
CA217XXX Food and Feed Chemistry
IDENTIFIERS: Sef14 fimbria antigen Salmonella diagnosis vaccine, poultry Salmonella screening Sef14 immunoassay, sefA gene Salmonella cloning expression

DESCRIPTORS:
Chicken(Gallus domesticus)... Turkey...
detection of Salmonella in; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
Immunoassay...
for Salmonella enteritidis; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
DNA sequences...
for Sef14 antigen of Salmonella enteritidis; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
Agglutination test...
latex bead, for Salmonella; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
Protein sequences...
of Sef14 antigen of Salmonella enteritidis; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
Plasmid vectors...
pETabc/sefA, sefA gene on, expression in Escherichia coli; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
Vaccines...
Salmonella; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
Poultry...
screening for Salmonella of; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
Genes(microbial)...
SefA, expression of; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
Pilus...
Sef14; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
Salmonella enteritidis...
truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
CAS REGISTRY NUMBERS:
202877-06-3 202877-08-5 amino acid sequence; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection
202877-05-2 202877-07-4 nucleotide sequence; truncated Sef14 fimbrial protein of Salmonella enteritidis and its use as antigen in diagnosis and prophylaxis of infection

16/7/44 (Item 5 from file: 399)
DIALOG(R)File 399:CA SEARCH(R)

120098470 CA: 120(9)98470x PATENT
Method of testing for Salmonella by nucleic acid hybridization

INVENTOR(AUTHOR): Woodward, Martin John; Thorns, Christopher John
LOCATION: UK,
ASSIGNEE: Minister of Agriculture, Fisheries and Food
PATENT: PCT International ; WO 9320231 A1 DATE: 931014
APPLICATION: WO 93GB647 (930329) *GB 927069 (920331)
PAGES: 36 pp. CODEN: PIXXD2 LANGUAGE: English CLASS: C12Q-001/68A; G01N-033/569B DESIGNATED COUNTRIES: AT; AU; BB; BG; BR; CA; CH; CZ; DE; DK ; ES; FI; GB; HU; JP; KP; KR; LK; LU; MG; MN; MW; NL; NO; NZ; PL; PT; RO; RU; SD; SE; SK; UA; US DESIGNATED REGIONAL: AT; BE; CH; DE; DK; ES; FR; GB ; GR; IE; IT; LU; MC; NL; PT; SE; BF; BJ; CF; CG; CI; CM; GA; GN; ML; MR; NE; SN; TD; TG
SECTION:
CA203001 Biochemical Genetics
CA209XXX Biochemical Methods
IDENTIFIERS: Salmonella detection DNA hybridization immunoassay, fimbria antigen immunoassay Salmonella detection
DESCRIPTORS:
Pili...
antigen of, of Salmonella, detection of, in Salmonella detection and identification
Salmonella dublin... Salmonella enteritidis... Salmonella typhi...
detection of, by immunoassay for fimbrial antigen and hybridization assay for fimbrial antigen DNA
Nucleic acid hybridization... Polymerase chain reaction...
DNA for fimbrial antigen of Salmonella detection by, in Salmonella detection and identification
Antigens...
of Salmonella fimbriae, cDNA for, detection of, in Salmonella detection and identification
Antibodies...
to fimbrial antigen, of Salmonella, detection of, by immunoassay,
CAS REGISTRY NUMBERS:
143241-73-0 amino acid sequence of
142461-66-3 142461-69-6 142461-74-3 142461-76-5 142461-77-6
142461-84-5 142900-62-7 as PCR primer or probe, for fimbrial antigen DNA detection, for Salmonella detection and identification
143275-37-0 152414-28-3 nucleotide sequence of

16/7/45 (Item 1 from file: 351)
DIALOG(R)File 351:Derwent WPI

013577305
WPI Acc No: 2001-061512/200107
Fimbriae proteins of Salmonella enterica subspecies I bacteria, useful for producing vaccines against the bacterial subspecies and for detecting the bacteria
Patent Assignee: ACTIVE BIOTECH AB (ACTI-N)
Inventor: FOLKESSON A; LOEFDAHL S; NORMARK S
Number of Countries: 093 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200073336	A1	20001207	WO 2000SE1079	A	20000526	200107	B
AU 200052628	A	20001218	AU 200052628	A	20000526	200118	

Priority Applications (No Type Date): SE 991961 A 19990528

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200073336	A1	E	77	C07K-014/225	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW

AU 200052628	A			C07K-014/225	Based on patent WO 200073336

Abstract (Basic): WO 200073336 A1

NOVELTY - Proteins (saf and tcf) (I) encoded by a DNA sequence of a gene encoding the precursor of the saf fimbriae unit of Salmonella enterica subspecies 1 comprising 46870 nucleotides (S1) (given in the specification) or a DNA sequence of the gene encoding the tcf fimbriae unit of S. enterica subspecies I serovar Typhi comprising 9253 nucleotides (S2) (given in the specification), are new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) antibodies (II) directed against (I), or antigenic fragments for use in medicine and in a diagnostic method;

(2) a nucleotide sequence of (S1) or (S2), or its parts for use in medicine;

(3) a vaccine (III) for protection against diseases caused by S. enterica subspecies I or S. enterica subspecies I serovar Typhi comprising (I) encoded by (S1) or (S2), respectively, (II) or its fragments and optionally, a carrier;

(4) a nucleic acid vaccine (IV) for protection against diseases caused by Salmonella enterica subspecies I or S. enterica subspecies I serovar Typhi comprising (S1) or (S2), respectively and optionally a carrier;

(5) a vector vaccine (V) for protection against diseases caused by S. enterica subspecies I or S. enterica subspecies I serovar Typhi comprising a host in which a recombinant vector comprising (S1) or (S2), or its parts, has been inserted respectively, and a carrier; and

(6) primers or probes that hybridize with a nucleotide sequence selected from (S1) and (S2), for use in a diagnostic method.

ACTIVITY - Antibacterial.

No supporting data is given.

MECHANISM OF ACTION - Vaccine; gene therapy.

No supporting data is given.

USE - (III), (IV), and (V) are useful for protection against diseases caused by S. enterica subspecies I or S. enterica subspecies I serovar Typhi. The saf and tcf proteins from S. enterica subspecies I bacteria are useful for active or passive immunization in mammals. The nucleotide sequences are useful for constructing vectors for use as vaccines for insertion into attenuated bacteria in constructing a recombinant viral vaccine, or for direct inoculation of a nucleic acid vaccine. The protein or antigenic fragments, nucleic acid sequences, and antibodies are useful in molecular diagnostic assays for the detection of S. enterica subspecies I.

pp; 77 DwgNo 0/4

Derwent Class: B04; D16

International Patent Class (Main): C07K-014/225

International Patent Class (Additional): A61K-039/112

16/7/46 (Item 2 from file: 351)
DIALOG(R)File 351:Derwent WPI

011703870
WPI Acc No: 1998-120780/199811
Detecting antibodies against Salmonella enteriditis using truncated fimbrial antigen Sef14 - in immunoassays, particularly for diagnosing infection in poultry, also new antigens
Patent Assignee: UNIV MINNESOTA (MINU)
Inventor: KAPUR V; NAGARAJA K V; RAJASHEKARA G
Number of Countries: 079 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9803656	A1	19980129	WO 97US12639	A	19970718	199811	B
AU 9737334	A	19980210	AU 9737334	A	19970718	199827	
EP 914438	A1	19990512	EP 97934225	A	19970718	199923	
			WO 97US12639	A	19970718		

Priority Applications (No Type Date): US 9622191 A 19960719
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9803656	A1	E	38	C12N-015/31	

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9737334	A		C12N-015/31	Based on patent WO 9803656
EP 914438	A1	E	C12N-015/31	Based on patent WO 9803656

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

Abstract (Basic): WO 9803656 A
Antibodies (Ab) against Salmonella enteriditis (Se) are detected in an animal by treating a sample with a truncated Sef14 antigen (Ag), lacking at least the native Sef14 signal peptide, and detecting any Ab-Ag complex formed.
Also claimed are Ag comprising or including a 144 amino acid sequence (A) reproduced.
USE - Detection (by enzyme-linked immunosorbent assay or agglutination tests) of Ab is used to diagnose Se infection in birds, especially chickens and turkeys. Ag can also be used (not claimed) in vaccines to protect poultry against Se infection.
ADVANTAGE - Detection of Ab is a sensitive, specific method for reliable and routine screening of animals. Ag are easily produced in large quantities, in pure form, without requiring special growing conditions, so are suitable for large scale screening of flocks.
Dwg.0/7
Derwent Class: B04; C07; D16; S03
International Patent Class (Main): C12N-015/31
International Patent Class (Additional): C07K-014/255; G01N-033/50

16/7/47 (Item 3 from file: 351)

DIALOG(R)File 351:Derwent WPI

009643388
WPI Acc No: 1993-336937/199342
Testing for Salmonella serotypes, esp. S. Typhi - using test kit for detecting nucleic acid sequences specific to certain sero-types
Patent Assignee: UK MIN FISHERIES & FOOD (UKAG-N)
Inventor: THORNS C J; WOODWARD M J
Number of Countries: 041 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9320231	A1	19931014	WO 93GB647	A	19930329	199342	B
AU 9338952	A	19931108	AU 9338952	A	19930329	199408	

Priority Applications (No Type Date): GB 927069 A 19920331
Cited Patents: EP 383509; WO 9201056; WO 9206197; WO 9206198
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9320231	A1	E	37	C12Q-001/68	

Designated States (National): AT AU BB BG BR CA CH CZ DE DK ES FI GB HU JP KP KR LK LU MG MN MW NL NO NZ PL PT RO RU SD SE SK UA US
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL OA PT SE

AU 9338952	A	C12Q-001/68	Based on patent WO 9320231

Abstract (Basic): WO 9320231 A

A method for testing for the presence of microorganisms of Salmonella serotype, S. typhi, comprises testing a sample of a material for the presence of a nucleic acid (NA) sequence characteristic of geromic DNA from the region encoding Salmonella enteriditis Fimbrial Antigen (SEFA) or its alleles. The presence of any of these is related to the presence of that serotype.

Also claimed is a test kit for performing the method, comprising one or both of: (a) PCR probes targeted at parts of sequences encoding SEFA or epitopes and capable of initiating PCR production of these sequencies in the presence of taq polymerase; and (b) hybridiation probes targeted at parts of sequences encoding SEFA or epitopes; and pref. at least 1 of: (c) (i) antibodies (Abs) to SEFA or epitopes or cells capable of producing ABs, (ii) SEFA or epitopes in the form of cells, fimbria, isolated SEFA or parts, immobilised on a surface; (iii) Abs capable of binding the Abs to SEFA; or (iv) medium or media capable of switching off expression of SEFA by S.entenditis and/or S.dublin or essential components for preparing the medium or media.

USE - Strains of Salmonella can be detected using specificity for a fimbrial antigen occurring specifically in non-S.tryphi organisms i.e. S.entenditis strains, some strains of S.dublin and 1 strain each of S.moscow and S.blegdam. The presence of the antigen is therefore indicative of the strain not being S.typhi

Dwg.0/0

Derwent Class: B04; D16; S03
International Patent Class (Main): C12Q-001/68
International Patent Class (Additional): G01N-033/569

16/7/48 (Item 4 from file: 351)
DIALOG(R)File 351:Derwent WPI

009023509
WPI Acc No: 1992-150883/199218
Detection and identification of salmonella - by using monoclonal antibodies to detect epitope(s) of these serotypes in culture
Patent Assignee: UK MIN FISHERIES & FOOD (UKAG-N); UK MIN AGRIC FISHERIES & FOOD (UKAG-N); UK MIN AGRIC FISH (UKAG-N)
Inventor: THORNS C J; WOODWARD M J; THORNS C
Number of Countries: 027 Number of Patents: 016
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9206197	A	19920416	WO 91GB1690	A	19911001	199218	B
WO 9206198	A	19920416	WO 91GB1691	A	19911001	199218	
AU 9185489	A	19920428	AU 9185489	A	19911001	199232	
			WO 91GB1690	A	19911001		
AU 9186566	A	19920428	AU 9186566	A	19911001	199232	
			WO 91GB1691	A	19911001		
EP 551324	A1	19930721	EP 91917117	A	19911001	199329	
			WO 91GB1691	A	19911001		
EP 551325	A1	19930721	EP 91917128	A	19911001	199329	
			WO 91GB1690	A	19911001		
JP 6501934	W	19940303	JP 91516110	A	19911001	199414	
			WO 91GB1690	A	19911001		
JP 6502531	W	19940324	JP 91517415	A	19911001	199417	
			WO 91GB1691	A	19911001		
AU 660152	B	19950615	AU 9185489	A	19911001	199532	
AU 660945	B	19950713	AU 9186566	A	19911001	199535	
US 5510241	A	19960423	US 9330208	A	19930326	199622	
			US 95449922	A	19950525		
EP 551324	B1	19970709	EP 91917117	A	19911001	199732	
			WO 91GB1691	A	19911001		
DE 69126786	E	19970814	DE 626786	A	19911001	199738	
			EP 91917117	A	19911001		
			WO 91GB1691	A	19911001		
ES 2103312	T3	19970916	EP 91917117	A	19911001	199744	
EP 551325	B1	20000315	EP 91917128	A	19911001	200018	
			WO 91GB1690	A	19911001		
DE 69132053	E	20000420	DE 632053	A	19911001	200026	
			EP 91917128	A	19911001		
			WO 91GB1690	A	19911001		

Priority Applications (No Type Date): GB 916546 A 19910327; GB 9021290 A 19901001; GB 9022570 A 19901017; GB 9021338 A 19901001
Cited Patents: 3.Jnl.Ref; EP 383509; WO 8600993; WO 8601805; WO 8910967
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9206197	A	E	54		
Designated States (National): AU BG BR CA FI HU JP KR NO PL RO SU US					
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LU NL SE					
EP 551325	B1	E		C12N-015/31	Based on patent WO 9206197
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL SE					
DE 69132053	E			C12N-015/31	Based on patent EP 551325
					Based on patent WO 9206197
WO 9206198	A	E	50		
Designated States (National): AU BG BR CA FI HU JP KR NO PL RO SU US					
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LU NL SE					

AU 9185489	A		C12N-015/31	Based on patent WO 9206197
AU 9186566	A		C12N-015/31	Based on patent WO 9206198
EP 551324	A1 E	54	C12N-015/31	Based on patent WO 9206198
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL SE				
EP 551325	A1 E	54	C12N-015/31	Based on patent WO 9206197
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL SE				
JP 6501934	W	24	C07K-015/12	Based on patent WO 9206197
JP 6502531	W	16	C12N-015/31	Based on patent WO 9206198
AU 660152	B		G01N-033/569	Previous Publ. patent AU 9185489
				Based on patent WO 9206197
AU 660945	B		C12N-015/31	Previous Publ. patent AU 9186566
				Based on patent WO 9206198
US 5510241	A	18	G01N-033/53	Cont of application US 9330208
EP 551324	B1 E	58	C12N-015/31	Based on patent WO 9206198
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL SE				
DE 69126786	E		C12N-015/31	Based on patent EP 551324
				Based on patent WO 9206198
ES 2103312	T3		C12N-015/31	Based on patent EP 551324

Abstract (Basic): WO 9206197 A

The following are claimed: (A) a method of testing for the presence of microorganisms of Salmonella serotypes S. enteritidis or S. dublin comprising exposing a sample suspected of contg. them or their fimbrial antigen (SEFA) to an antibody raised to the fimbrial antigen or an epitopic part of it and the relating the occurrence of antibody -antigen specific binding to the presence of the serotypes; (B) a method of testing for the presence of antibodies to S. enteritidis fimbrial antigen (SEFA) comprising exposing SEFA or an epitopic part of it to a sample suspected of contg. such antibodies and then relating the occurrence of antibody -antigen specific binding to the presence of the antibodies .

USE/ADVANTAGE - The methods can be used for testing for the presence of Salmonella microorganisms in clinical samples such as animal remains or prods., food samples and infected environmental samples. Out of the hundreds of serotypes of Salmonella found in nature, the methods can detect two of the most significant with regard to food poisoning

Dwg.0/3

Abstract (Equivalent): EP 551324 B

Recombinant DNA encoding (a) the Salmonella enteritidis fimbrial antigen (SEFA) amino acid sequence: M L I V D F W R F C N M R K S A S A V A V L A L I A C G S A H A A G F V G N K A E V Q A A V T I A A Q N T T S A N W S Q D P G F T G P A V A A G Q K V G T L S I T A T G P H N S V S I A G K G A S V S G G V A T V P F V D G Q G Q P V F R G R I Q G A N I N D Q A N T G I D G L A G W R V A S S Q E T L N V P V T T F G K S T L P A G T F T A T F Y V Q Q Y Q N; (b) an epitopic part thereof, or (c) an ellelic variant of either the epitopic part and the allelic variant being characterised in that they are capable of specific binding with monoclonal antibody secreted by at least one of the hybridoma cell lines deposited at the ECACC under the accession numbers 90101101 and 90121902.

Dwg.0/0

Abstract (Equivalent): US 5510241 A

A method of testing a sample for the presence of microorganisms for Salmonella serotypes expressing Salmonella enteritidis fimbrial antigen (SEFA) comprising the steps of:

(a) exposing a sample suspected of containing the microorganisms,

or SEFA to an antibody which specifically binds to the antigen specifically bound by the monoclonal antibody secreted by ECACC 90101101 or ECACC 90121902 or an antibody which specifically binds the epitope bound by the monoclonal antibody secreted by ECACC 90101101 or ECACC 90121902;

(b) detecting antibody -antigen specific binding, wherein antigen-antibody specific binding is indicative of the presence of microorganisms selected from the group consisting of S. enteritidis, S. dublin, S. moscow and S. blegdam, and the absence of antibody -antigen specific binding is indicative of the absence of S. enteritidis.

Dwg.0/3

Derwent Class: B04; D13; D16; S03

International Patent Class (Main): C07K-015/12; C12N-015/31; G01N-033/53; G01N-033/569

International Patent Class (Additional): C07H-021/04; C07K-007/06; C07K-007/08; C07K-007/10; C07K-013/00; C07K-014/255; C07K-016/00; C12N-001/20; C12N-005/20; C12N-015/62; C12P-021/08; C12Q-001/68; G01N-033/56

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